

REMARKS

The rejection of Claims 1 and 3-6 under 35 U.S.C. § 103(a) as unpatentable over U.S. 4,397,799 (Edgren et al), is respectfully traversed.

The present invention relates to a process for producing plastic microballoons which are prevented from flying and are used as a filler in various paints, construction materials, plastics and the like to reduce their weights. Described more specifically, expanded microballoons are generally used after applying non-flying treatment because they are light, have pronounced flying tendency and are hence difficult to handle. Nonetheless, they are still accompanied by various problems, and their handling properties and the like are by no means satisfactory. The present invention is concerned with a process for producing non-flying microballoons with good handling properties.

As described in the specification under "Description of the Related Art" beginning at page 1, line 17, processes for producing microballoons are known in the art, but suffer from various problems, as detailed therein. A number of these processes involve beginning with a slurry in which expandable microballoons are dispersed in a wetting agent. These processes are problematical, for reasons described therein.

The present invention addresses these problems. As recited in Claim 1, the invention is a process for the production of non-flying plastic microballoons, which comprises bringing unexpanded, expandable plastic microballoons, which have been heated to a temperature lower than an expansion starting temperature thereof, and a mixture of a wetting agent and gas, said mixture having been heated to a temperature at least equal to said expansion starting temperature of said expandable plastic microballoons, into contact with each other to cause expansion of said expandable plastic balloons, and then cooling the resulting expanded plastic balloons.

Edgren et al discloses a process for drying and expanding microspheres comprising preparing a dispersion of the microspheres in an inert liquid, and then atomizing the dispersion in a hot inert gas, wherein the inert liquid is preferably water and the inert gas is preferably air (column 2, lines 13-18).

Edgren et al neither disclose nor otherwise suggest the presently-claimed invention. As detailed above, the present invention involves bringing preheated, pre-expanded, microballons *per se* into contact with a mixture of a wetting agent and a gas, not a dispersion of the microballoons. Nor does Edgren et al recognize any importance of the temperature of their pre-expanded microspheres, even if already in a dispersion, since Edgren et al disclose that the temperature is not critical and may be as low as room temperature (column 2, lines 21-25). Nor does Edgren et al disclose or suggest a mixture of a wetting agent and a gas, even if the water of Edgren et al could be characterized as a wetting agent which, Applicants respectfully submit, would not be considered as a species thereof in this art. Indeed, Edgren et al is even farther away from the presently-claimed invention than the prior art described in the specification.

For all the above reasons, it is respectfully requested that the rejection over Edgren et al be withdrawn.

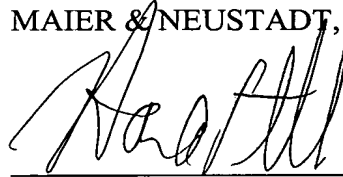
The rejection of Claim 2 under 35 U.S.C. § 112, second paragraph, is respectfully traversed. Indeed, the rejection is now moot in view of the above-discussed amendment. Accordingly, it is respectfully requested that it be withdrawn.

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All of the presently pending claims in this application are now believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Respectfully submitted,

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